

General

Guideline Title

Nonpharmacologic pain interventions: a review of evidence-based practices for reducing chronic cancer pain.

Bibliographic Source(s)

Eaton LH, Brant JM, McLeod K, Yeh C. Nonpharmacologic pain interventions: a review of evidence-based practices for reducing chronic cancer pain. Clin J Oncol Nurs. 2017 Jun 1;21(3):54-70. [PubMed](#)

Guideline Status

This is the current release of the guideline.

This guideline updates a previous version: Aiello-Laws L, Reynolds J, Deizer N, Peterson M, Ameringer S, Bakitas M. Putting evidence into practice: what are the pharmacologic interventions for nociceptive and neuropathic cancer pain in adults. Clin J Oncol Nurs. 2009 Dec;13(6):649-55. [55 references]

This guideline meets NGC's 2013 (revised) inclusion criteria.

NEATS Assessment

National Guideline Clearinghouse (NGC) has assessed this guideline's adherence to standards of trustworthiness, derived from the Institute of Medicine's report [Clinical Practice Guidelines We Can Trust](#).

■■■■= Poor ■■■= Fair ■■■= Good ■■■= Very Good ■■■= Excellent

Assessment	Standard of Trustworthiness
NO	Disclosure of Guideline Funding Source
■■■■	Disclosure and Management of Financial Conflict of Interests
	Guideline Development Group Composition

YES	Multidisciplinary Group
YES	Methodologist Involvement
■□□□	Patient and Public Perspectives
	Use of a Systematic Review of Evidence
■■■■□	Search Strategy
■■■■■	Study Selection
■■■■■	Synthesis of Evidence
	Evidence Foundations for and Rating Strength of Recommendations
■■■□□	Grading the Quality or Strength of Evidence
■■■□□	Benefits and Harms of Recommendations
■■■■■	Evidence Summary Supporting Recommendations
■■■□□	Rating the Strength of Recommendations
■□□□□	Specific and Unambiguous Articulation of Recommendations
■□□□□	External Review
■■□□□	Updating

Recommendations

Major Recommendations

Note from the National Guideline Clearinghouse (NGC): Refer to the original guideline document for full dosages, references, and other essential information about the evidence. The recommendation ratings (Recommended for Practice, Likely To Be Effective, Effectiveness Not Established, Effectiveness Unlikely, Not Recommended for Practice, Expert Opinion) are defined at the end of the "Major Recommendations" field.

See also the NGC summaries of the related Oncology Nursing Society (ONS) guidelines on cancer-related pain:

[Cancer-related acute pain: a systematic review of evidence-based interventions for Putting Evidence Into Practice.](#)

[Chronic and refractory pain: a systematic review of pharmacologic management in oncology.](#)

[Breakthrough cancer pain: a systematic review of pharmacologic management.](#)

Recommended for Practice

Procedural

Celiac plexus block
Radiation therapy

Likely to Be Effective

Educational

Psychoeducational Interventions

Nurse-led education sessions
Interactive cognitive behavioral therapies
Telehealth interviews
Psychosocial interventions
Structural education with a booklet
Tailored education
Coaching

Effectiveness Not Established

Behavioral

Dance movement therapy
Exercise
Expressive writing
Hypnosis
Relaxation/progressive muscle relaxation and guided imagery
Yoga

Body-based

Acupressure
Acupuncture
Foot massage
Massage

Energy-based

Reiki
Therapeutic touch

Organizational

Institutional initiative
Multicomponent rehabilitation
Palliative care

Procedural

Celiac ganglion irradiation
Cranial stimulation
Cryoablation
Fat graft
Gene therapy
Hypogastric neurolysis
Microwave ablation
Neural block
Radiofrequency ablation and osteoplasty
Radiosurgery
Scrambler therapy

Spinal cord stimulation
Transcutaneous electrical nerve stimulation (TENS)
Ultrasound

Definitions

Recommended for Practice

Interventions for which effectiveness has been demonstrated by strong evidence from rigorously designed studies, meta-analysis, or systematic reviews, and for which expectation of harms is small compared to the benefits

Likely To Be Effective

Interventions for which effectiveness has been demonstrated from a single rigorously designed controlled trial, consistent supportive evidence from well-designed controlled trials using small samples, or guidelines developed from evidence and supported by expert opinion

Benefits Balanced With Harm

Interventions for which clinicians and patients should weigh the beneficial and harmful effects according to individual circumstances and priorities

Effectiveness Not Established

Interventions for which insufficient or conflicting data or data of inadequate quality currently exist, with no clear indication of harm

Effectiveness Unlikely

Interventions for which lack of effectiveness has been demonstrated by negative evidence from a single rigorously conducted controlled trial, consistent negative evidence from well-designed controlled trials using small samples, or guidelines developed from evidence and supported by expert opinion

Not Recommended for Practice

Interventions for which lack of effectiveness or harmfulness has been demonstrated by strong evidence from rigorously conducted studies, meta-analyses, or systematic reviews, or interventions where the costs, burden, or harm associated with the intervention exceed anticipated benefit

Expert Opinion

Low-risk interventions that are consistent with sound clinical practice, suggested by an expert in a peer reviewed publication, and for which limited evidence exists (an expert is an individual who has published peer reviewed material in the domain of interest.)

For further information, see the "Decision rules for summative evaluation of a body of evidence" document (see the "Availability of Companion Documents" field).

Clinical Algorithm(s)

None provided

Scope

Disease/Condition(s)

Chronic cancer pain

Guideline Category

Management

Treatment

Clinical Specialty

Nursing

Oncology

Intended Users

Advanced Practice Nurses

Health Care Providers

Nurses

Guideline Objective(s)

To critically appraise the strength and quality of the empirical evidence for nonpharmacologic interventions in reducing chronic cancer pain

Target Population

Patients with chronic cancer pain

Interventions and Practices Considered

1. Celiac plexus block
2. Radiation therapy
3. Psychoeducational interventions

Note: The following were considered, but their effectiveness is not established: dance movement therapy, exercise, expressive writing, hypnosis, relaxation/progressive muscle relaxation and guided imagery, yoga, acupressure, acupuncture, foot massage, massage, reiki, therapeutic touch, institutional initiative, multicomponent rehabilitation, palliative care, celiac ganglion irradiation, cranial stimulation, cryoablation, fat graft, gene therapy, hypogastric neurolysis, microwave ablation, neural block, radiofrequency ablation and osteoplasty, radiosurgery, scrambler therapy, spinal cord stimulation, transcutaneous nerve stimulation, ultrasound.

Major Outcomes Considered

- Pain intensity/relief
- Quality of life

Methodology

Methods Used to Collect/Select the Evidence

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

A comprehensive review was conducted of the PubMed and CINAHL® databases, as well as the National Comprehensive Cancer Network guidelines from January 1, 2009 to July 31, 2016.

The Oncology Nursing Society (ONS) Putting Evidence Into Practice (PEP) program conducted a literature search for pain prior to 2009. Thirty-four articles from the previous search were included in the cancer-related pain guidelines. These articles were subject to the same inclusion and exclusion criteria as the articles for the new search.

Articles from January 2002 to June 2016 are represented in this guideline.

Pain Topic Search Strategy

The following strategy was used across all four pain guidelines (see the "Major Recommendations" field).

Databases Used

PubMed

(pain[ti] AND cancer[ti]) OR ((pain[ti] OR pain[majr]) AND neoplasms[majr]) AND (("2009/01/01"[PDAT] : "2016/07/31"[PDAT]) AND "humans"[MeSH Terms] AND English[lang] AND cancer[sb])

CINAHL®

(MH "Cancer Pain" OR (TI cancer AND TI pain)) OR (MM pain AND (cancer OR neoplasms OR oncolog*))

Limiters: English language; clinical queries: therapy–high sensitivity, therapy–high specificity, therapy–best balance

Inclusion Criteria

Full research report, systematic review, guideline, or meta-analysis

Study must report results of measurement of pain, including acute, chronic, breakthrough, or refractory pain.

The study examines a pharmacologic or nonpharmacologic intervention aimed at affecting pain.

Sample must include patients with cancer.

Include pediatric and/or adult studies

Studies aimed at treatment of pain (may include other symptoms) rather than treatment of the cancer

Sample size of at least 40, or 20 per study group

For complex interventions, the description of the intervention must be sufficient to identify the components of that intervention.

Exclusion Criteria

Gray literature

Descriptive study

Studies involving the use of standard short-acting or sustained or extended-release opioids (Only studies involving new formulations or unusual use of these medications will be included.)

Studies involving examination of effects of different types of surgical anesthesia

Studies involving surgical procedures as the primary intervention

Number of Source Documents

After removal of duplicates and studies that did not meet the inclusion criteria, the current authors found 154 studies that addressed nonpharmacologic interventions for chronic cancer pain management.

Methods Used to Assess the Quality and Strength of the Evidence

Expert Consensus (Committee)

Weighting According to a Rating Scheme (Scheme Given)

Rating Scheme for the Strength of the Evidence

Panels of advanced practice nurses, staff nurses, and doctorally-prepared nurse researchers reviewed the literature base in the identified outcome areas. Professional health services librarians assisted in the conduct of the literature searches. Based on their analysis, the panels then formulated a judgment about the body of evidence related to the intervention under consideration. Three major components were considered by the panels in classifying the collective evidence into one of six Weight of Evidence categories (see the "Rating Scheme for the Strength of the Recommendations" field):

- Quality of the data, with more weight assigned to levels of evidence higher in the PRISM categorization (such as randomized trials and meta-analyses)

- Magnitude of the outcome (e.g., effect size or minimal clinically important difference)

- Concurrence among the evidence (based on the premise that an investigator has less confidence in findings in which the lines of evidence contradict one another)

Methods Used to Analyze the Evidence

Review of Published Meta-Analyses

Systematic Review with Evidence Tables

Description of the Methods Used to Analyze the Evidence

The Oncology Nursing Society (ONS) information resources supervisor thoroughly searched the literature according to the strategy and search terms shown in the "Description of Methods Used to Collect/Select the Evidence" field. Studies that met inclusion criteria were assigned to pairs of pain Putting Evidence Into Practice (PEP) team members, who reviewed and summarized included articles using a standard form. Each article was reviewed by one pain PEP team member and then peer-reviewed by the second pain PEP team member. The form included information about the purpose of the study and a brief description of the intervention, sample size and characteristics, study design, measurement instruments, conclusions, limitations that show risk of bias and threats to validity in design, and implications for nursing practice.

Methods Used to Formulate the Recommendations

Expert Consensus (Consensus Development Conference)

Description of Methods Used to Formulate the Recommendations

The Putting Evidence Into Practice (PEP) program is a multifaceted project that involves the coordination of Oncology Nursing Society (ONS) staff as well as volunteer team contributors. PEP topic teams are comprised of volunteer nurse researchers, advanced practice nurses, and staff nurses who have demonstrated experience and interest in a PEP topic. Topic leaders are nurse scientists or advanced practice nurses with demonstrated expertise in the topic through research and/or publications.

PEP team members applied the ONS PEP classification scheme (see the "Rating Scheme for the Recommendations" field) to individual interventions via Web-based meetings occurring about every six

months. PEP team members included nurse scientists, advanced practice nurses, and staff nurses. Classification considers all previous as well as new evidence for each intervention. Conferences are facilitated by ONS research staff and classification of individual interventions is determined by team consensus.

Teams categorize interventions based on the ONS PEP weight-of-evidence classification schema. The schema is intended to be used with existing research-based knowledge on health interventions and is based on previous research. PEP teams consider the entire body of evidence rather than a single study for classification, and more weight is given to studies that rank higher in ONS's priority symptom management project categorization. Team members also consider the magnitude of the outcome and the concurrence of the evidence for an intervention prior to assigning a classification. Interventions are classified by team consensus after application of the schema.

Rating Scheme for the Strength of the Recommendations

Recommended for Practice

Interventions for which effectiveness has been demonstrated by strong evidence from rigorously designed studies, meta-analysis, or systematic reviews, and for which expectation of harms is small compared to the benefits

Likely To Be Effective

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Expert Opinion

Low-risk interventions that are consistent with sound clinical practice, suggested by an expert in a peer reviewed publication, and for which limited evidence exists (an expert is an individual who has published peer reviewed material in the domain of interest.)

For further information, see the "Decision rules for summative evaluation of a body of evidence" document (see the "Availability of Companion Documents" field).

Cost Analysis

A formal cost analysis was not performed and published cost analyses were not reviewed.

Method of Guideline Validation

External Peer Review

Description of Method of Guideline Validation

The article has been reviewed by independent peer reviewers to ensure that it is objective and free from bias.

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The type of supporting evidence is identified for each recommendation (see the original guideline document).

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

- In a meta-analysis of 10 randomized controlled trials (RCTs), approximately 60% of patients with painful bone metastases received some benefit from re-irradiation of radiation-refractory bone pain.
- The National Comprehensive Cancer Network (NCCN) (2016) guidelines for adult cancer pain conclude that celiac plexus block (CPB) may provide improvement in pain reduction compared to systemic analgesics.
- One meta-analysis of studies using coaching sessions showed significant differences in average pain intensity compared to usual care or control.

Potential Harms

Toxicity associated with radiation therapy

Qualifying Statements

Qualifying Statements

The authors take full responsibility for the content of the article. The authors did not receive honoraria for this work. The content of this article has been reviewed by independent peer reviewers to ensure that it is balanced, objective, and free from commercial bias.

Implementation of the Guideline

Description of Implementation Strategy

An implementation strategy was not provided.

Implementation Tools

Resources

Staff Training/Competency Material

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Getting Better

Living with Illness

IOM Domain

Effectiveness

Patient-centeredness

Identifying Information and Availability

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Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

2017 Jun 1

Guideline Developer(s)

Oncology Nursing Society - Professional Association

Source(s) of Funding

Oncology Nursing Society

Guideline Committee

Oncology Nursing Society Putting Evidence Into Practice® (ONS PEP) Expert Panel

Composition of Group That Authored the Guideline

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Financial Disclosures/Conflicts of Interest

All volunteers complete the standardized Oncology Nursing Society (ONS) conflict of interest and confidentiality forms.

The authors take full responsibility for this content and did not receive honoraria or disclose any relevant financial relationships.

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This guideline meets NGC's 2013 (revised) inclusion criteria.

Guideline Availability

Available to subscribers from the [Clinical Journal of Oncology Nursing Web site](#) .

Availability of Companion Documents

The following are available:

- Brant JM, Eaton LH, Irwin MM. Cancer-related pain: assessment and management with Putting Evidence Into Practice interventions. Clin J Oncol Nurs. 2017 Jun 1;21(3):4-7. Available to subscribers from the [Clinical Journal of Oncology Nursing Web site](#) .
- Chronic pain. [internet]. Pittsburgh (PA): Oncology Nursing Society. 2017 Mar 30. Available from the [Oncology Nursing Society \(ONS\) Web site](#) .
- Mitchell SA, Friese CR. Decision rules for summative evaluation of a body of evidence. [internet]. Pittsburgh (PA): Oncology Nursing Society. Available from the [ONS Web site](#) .
- Johnson LA. Putting Evidence Into Practice: the process for evidence-based research. Clin J Oncol Nurs. 2014 Dec;18(6 Suppl):2-4. Available from the [Clinical Journal of Oncology Nursing Web site](#) .
- Putting Evidence Into Practice (PEP) rating system overview. [internet]. Pittsburgh (PA): Oncology Nursing Society. Available from the [ONS Web site](#) .

ONS journal activity 2017: nonpharmacologic pain interventions: a review of evidence-based practices for reducing chronic cancer pain. [internet]. Pittsburgh (PA): Oncology Nursing Society. Available from the [ONS Web site](#) .

Patient Resources

None available

NGC Status

This NGC summary was completed by ECRI Institute on December 3, 2010. The information was verified by the guideline developer on February 3, 2011. This summary was updated by ECRI Institute on October 28, 2013 following the U.S. Food and Drug Administration advisory on Acetaminophen. The currency of the guideline was reaffirmed by the developer in 2011 and this summary was updated by ECRI Institute on November 8, 2013. This summary was updated by ECRI Institute on September 18, 2015 following the U.S. Food and Drug Administration advisory on non-aspirin nonsteroidal anti-inflammatory drugs (NSAIDs). This summary was updated by ECRI Institute on February 5, 2018. The updated information was verified by the guideline developer on February 21, 2018.

This NEATS assessment was completed by ECRI Institute on November 16, 2017. The information was verified by the guideline developer on February 21, 2018.

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